

Practitioner Disciplines Involved in Transportation Decision Making

ARCHAEOLOGIST



Professional Training and Certification: Professional archaeologists typically have at least a Masters Degree in archaeology or anthropology, and some have a Ph.D. as well. Archaeologists can optionally apply to be a Registered Professional Archaeologist (RPA). RPA's are held to a Code of Conduct and Standards of Research Performance:

<http://www.rpanet.org/displaycommon.cfm?an=2>.

Federal regulations (36 CFR 61) define the minimum requirements for archaeologists conducting work on projects receiving federal funding:

http://www.nps.gov/history/local-law/arch_stnds_9.htm

Contribution to Understanding and Defining the Context of a Transportation Project: Archaeologists are typically involved in a transportation project in three circumstances: (1) to assist in the determination of a preferred alignment if the location of a proposed transportation project intersects or is near a known archaeological or cultural resource, and during construction to minimize or mitigate impacts to historical artifacts; (2) when, during construction, evidence of previously unknown historical artifacts is discovered, to take immediate steps to mitigate damage and/or move the artifacts; (3) to determine where the probability of archaeological sites may be high and perform investigations to determine the presence of sites.

Stages of Transportation Project: #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: Delaware DOT Cultural Resources – Archaeological/Historical Preservation (<http://www.deldot.gov/archaeology/>); Tennessee DOT Environmental Planning and Permits Division, Archaeology Section (<http://frank.mtsu.edu/~kesmith/TNARCH/tdot.html>)

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BUDGET/FINANCE PROFESSIONAL



Professional Training and Certification: Training and certification for budget and finance professionals varies. Many of these professionals have backgrounds in accounting, although some may also have studied in other related fields, such as business administration or economics. One potential certification is the Certified Public Finance Administrator (CPFA) from the Association of Public Treasurers of the United States and Canada.

Contribution to Understanding and Defining the Context of a Transportation Project: Budget/finance professionals provide valuable insight during the planning and programming phases. As part of the long-range planning process, forecasts of expected revenues play an important role in ensuring that planned projects can realistically be funded within the timeframe of the plan. Programming requires detailed analysis of expected costs and revenues within a several-year period.

Stages of Transportation Project: #2 (Long-range Planning & Programming)

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CONSTRUCTION ENGINEER



Professional Training and Certification: A construction engineer (or resident engineer) is a specialized type of civil engineer. Many states do not require a construction engineer to be licensed since he or she is required to strictly follow the construction plans approved by the licensed Professional Engineer.

Contribution to Understanding and Defining the Context of a Transportation Project: Construction engineers oversee work that is conducted in the field, ensuring that the design engineer's plans are followed accurately, infrastructure meets safety standards, and pavement conditions are adequate. Their understanding of context can help them lessen the negative impacts of construction and maintenance activities on the community, such as altering work hours to accommodate school traffic, working with urban foresters to protect culturally significant trees near construction, ensuring that environmental and other specifications are followed, or making sure pedestrians can easily reach local businesses.

Stages of Transportation Project: #5 (Construction)

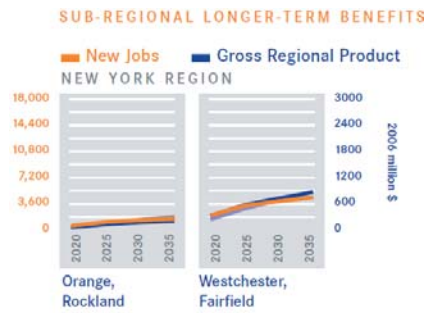
Note: Construction engineers should be consulted during planning, programming, design and operations.

Work Samples: King County (WA) Road Services Division

<http://www.kingcounty.gov/transportation/kcdot/Roads.aspx>

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ECONOMIST



Professional Training and Certification: Most professional economists have a PhD in Economics, though some may have only a Bachelors or Masters degree.

Contribution to Understanding and Defining the Context of a Transportation Project: Economists can provide useful information to help engineers and planners understand the economic impacts of transportation projects on communities. For example, many transportation projects are explicitly intended to enhance the economic development of a community by improving access and providing opportunities for development in a previously undeveloped area (called Indirect and Cumulative Impacts, or Induced Growth). Understanding the potential economic costs and benefits of a project can help a community prepare for new development. Economists are responsible for estimating the impacts of both specific transportation projects and for groups of projects during the planning and programming stages.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #6 (Operations & Maintenance)

Work Samples: Economic Benefits of the Trans-Hudson Passenger Rail Express Tunnel

(http://www.arctunnel.com/pdf/library/economic_benefits_of_thetunnel.pdf); Caltrans Economic Impact Analysis (http://www.dot.ca.gov/hq/tpp/offices/ote/benefit_cost/benefits/economic_impact_analysis/)

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ENVIRONMENTAL SCIENTIST



Professional Training and Certification: Environmental scientists may have advanced training in a variety of relevant fields, such as biology, ecology, soil science, hydrology, engineering, or other scientific fields. Some environmental scientists obtain optional certification as a Certified Environmental Professional (CEP) by demonstrating skills and experience in one of five environmental areas: assessment, documentation, operations, planning, research and education. CEP scientists are required to adhere to the Code of Ethics and Standards of Practice for Environmental Professionals (<http://www.abcep.org/>). Another type of optional certification is as a Professional Wetland Scientist (PWS), which also has a Code of Ethics (<http://www.wetlandcert.org/code.html>).

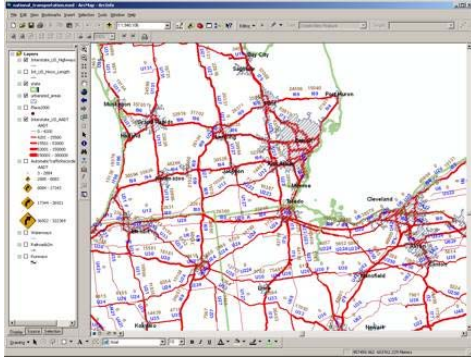
Contribution to Understanding and Defining the Context of a Transportation Project: Environmental scientists are critical in assessing, documenting and mitigating the environmental impacts of transportation projects to comply with state and national environmental laws and regulations. This work may involve diverse activities and several different environmental science specialties depending on the project, such as field visits to determine whether endangered species or wetlands are present at the proposed site, computer simulation and modeling to determine the impact of a proposed project on stormwater runoff in a critical water basin or impaired stream, and documentation to comply with laws and regulations (Environmental Impact Statement (EIS), Environmental Assessment (EA), or other). DOT environmental scientists often oversee NEPA compliance, and oversee the work of outside environmental consultants. Environmental scientists also participate in long-range planning and programming, helping to select and prioritize transportation projects that minimize potential environmental impacts. Several states have environmental staff specifically to support construction and maintenance.

Stages of Transportation Project: #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance).

Work Samples: Geneva Road (Utah) Environmental Impact Statement (<http://www.udot.utah.gov/geneva/feis.php>), Bruckner Sheridan Interchange (New York) Environmental Impact Statement (https://www.nysdot.gov/regional-offices/region11/projects/project-repository/bese/eis_documents.html)

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GEOGRAPHIC INFORMATION SYSTEM (GIS) SPECIALIST



Professional Training and Certification: GIS Specialists generally have completed a GIS certificate program or obtained a Bachelor of Science degree in Geography with an emphasis on GIS work. A GISP is a certified geographic information systems professional who has met the minimum standards for ethical conduct and professional practice as established by the GIS Certification Institute (<http://www.gisci.org/>).

Contribution to Understanding and Defining the Context of a Transportation Project: GIS Specialists use GIS to integrate information from different sources, enabling better and more efficient transportation decision making. GIS Specialists can make maps that display data spatially and observe geographic patterns. They can also create maps that only show particular data items within databases, customizing visual displays for particular uses, such as showing traffic volumes or pavement conditions on a roadway. Another vital skill of a GIS Specialist is the ability to create visualizations of project alternatives effectively and efficiently in response to public or agency comments.

Stages of Transportation Project: #2 (Planning and Programming), #3 (Environmental Studies and Preliminary Design)

Work Samples: Geographic Information Systems Applications for Bicycle and Pedestrian Decision Making (http://www.gis.fhwa.dot.gov/documents/GIS_BikePed_Peer_rpt.pdf), Geographic Information Systems Applications for Transportation Right-Of-Way (<http://www.gis.fhwa.dot.gov/documents/rightOfWay.asp#appa>)

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HISTORIAN/ARCHITECTURAL HISTORIAN



Professional Training and Certification: Professional historians are likely to have a graduate degree in history, architecture, archaeology, or historic preservation. Federal regulations (36 CFR 61) define the minimum requirements for architectural historians conducting work on projects receiving federal funding:

http://www.nps.gov/history/local-law/arch_stnds_9.htm

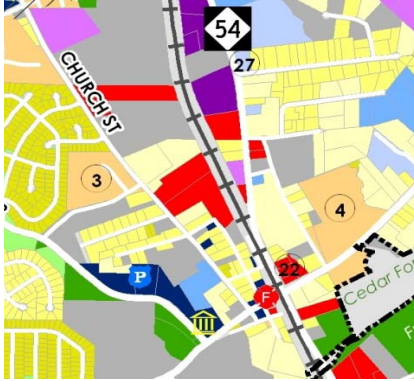
Contribution to Understanding and Defining the Context of a Transportation Project: Historians may be called upon to provide information about locations and buildings of historical or cultural significance that may be impacted by a proposed project. Some State Historic Preservation Office (SHPO) guidelines require that a professional historian who meets state standards be involved in certain transportation projects. Review of a transportation project funded with federal money may also be required under Section 106 of the Historic Preservation Act of 1966 if the project meets certain criteria. By providing information and guidance during the preliminary design process, architectural historians can help engineers avoid or minimize impacts to these resources. For example, they may be called upon for assistance if a bridge with historical and cultural significance needs to be replaced because it cannot support the weight of large trucks or has other structural problems. Historians could assist engineers with designing a replacement bridge that meets modern structural requirements but that incorporates elements that are similar to the original (e.g., overall design, façade, lamp posts).

Stages of Transportation Project: #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: US 231 Relocation Study Section 106 Report (IN)
(<http://www.relocate231.com/culturalresources.htm>);
World Trade Center Section 106 Status Report
(http://www.panynj.gov/wtcprogress/pdf/sec_106_status_report_5.pdf)

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LAND USE PLANNER



Professional Training and Certification: Typically, professional planners have a Masters degree in Urban Planning. Some land use planners also have advanced degrees in public health or geography. Certification through the American Institute of Certified Planners (AICP) is not required for planning professionals, but is common. Planners who are part of AICP are required to adhere to the AICP Code of Ethics and Professional Conduct (<http://www.planning.org/ethics/ethicscode.htm>).

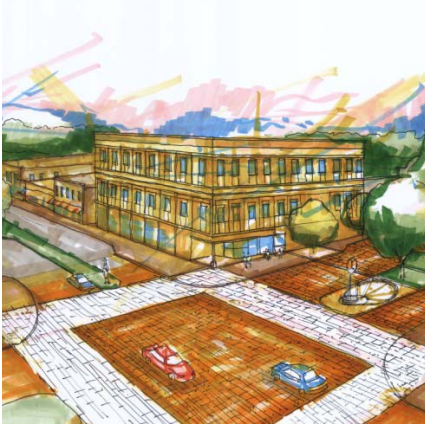
Contribution to Understanding and Defining the Context of a Transportation Project: Land use planners work with transportation planners to ensure that local land use policies and zoning are complementary to transportation infrastructure. For example, if a new roadway is planned, it is essential to know the land uses it will serve (commercial businesses, industrial facilities, residential neighborhoods) in order for transportation planners to determine the number of lanes, turn lanes, traffic signals, etc. as well as plan for an appropriate level of heavy truck traffic. Land use planners are also involved in the environmental studies and preliminary project design to help identify the extent and type of development that can be expected as a result of a particular transportation project; and in the operations phase in determining with engineers appropriate solutions to alleviate traffic congestion problems (e.g., changes in configuration and number of driveways to access adjacent land uses, changes at traffic signals including pedestrian facilities). An increasing number of state DOTs have started to conduct corridor-level transportation and land use planning, and land use planners are central to the success of these efforts.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #6 (Operations & Maintenance)

Work Samples: Maine Gateway 1 Project (<http://www.gateway1.org/>); City of St. Louis Strategic Land Use Plan (<http://stlcin.missouri.org/landuse/index.cfm>)

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LANDSCAPE ARCHITECT



Professional Training and Certification: Landscape architects typically have a Masters degree in Landscape Architecture. Landscape architects are regulated and licensed through licensure boards in 49 states, and the territory of Puerto Rico, under the umbrella of membership in the Council of Landscape Architectural Registration Boards (CLARB). CLARB and its members establish standards for education, experience and examinations for professional licensure of landscape architects to further ensure that landscape architectural services can be provided without endangering the health, safety and welfare of the public.

Contribution to Understanding and Defining the Context of a Transportation Project: Landscape architecture is a broad design profession that integrates a working knowledge of art, architecture, civil engineering, environmental science, social science and physical planning to preserve, design, and manage practical, safe, healthy, aesthetic, and sustainable relationships between people, animals, plants, infrastructure, and development upon the land. Landscape architects assist engineers and planners in preliminary and final design of transportation projects by enhancing the design of a project to make it look and function better within the character of the existing community. This work can include elements of the transportation project itself (such as the aesthetics of the façade on a bridge or overpass, or changes in design to reduce stormwater runoff or decrease impervious surface) as well as coordinating elements such as streetscaping (trees, benches, sidewalk design) to improve the function and aesthetics of the project. They also assist in planning and design phases by visualizing the proposed project using hand and digital renderings to communicate with the public what the project will look like when complete. Landscape Architects work with construction and maintenance on designing revegetation or environmental restoration plans appropriate to the ecoregion and individual site.

Stages of Transportation Project: #3 (Environmental Studies and Preliminary Design), #4 (Final Design & Right-of-way), #6 (Operations & Maintenance).

Work Samples: Caltrans Landscape Architecture Program (<http://www.dot.ca.gov/hq/LandArch/>); City of Seattle Landscape Architecture Program (<http://www.seattle.gov/Transportation/landscape.htm>)

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MAINTENANCE ENGINEER



Professional Training and Certification: A maintenance engineer (or resident engineer) is a specialized type of civil engineer. Many states do not require a maintenance engineer to be licensed since they are following plans approved by a Professional Engineer (PE) and/or doing non-engineering work.

Contribution to Understanding and Defining the Context of a Transportation Project: Maintenance Engineers and technicians live and work in the field and often have a good feel for the environments on the roads they maintain. Their understanding of context can help them lessen the negative impacts of maintenance activities on the community and/or identify positive improvements that can be made (e.g. fishing access improvements, more efficient or environmentally effective ways of conducting maintenance work and fixing identified problems). , Maintenance engineers and technicians exercise considerable autonomy in the field. Maintenance staff manage roads and roadsides through many years and many different types of conditions, from winter maintenance or flooding through vegetation and facility management and public use of the facility; therefore, they often have first hand experience with transportation assets in operation and failure. They have a sense of what works, what doesn't, and what can be done in many different contexts. Many DOT maintenance staffs have seen reductions by a third or more in the last decade, though work has increased. As a result, many maintenance departments have put little time into thinking about how to communicate with the public about the environmental management they are or could be doing, or how to do so in a way that is meaningful to citizens.

Stages of Transportation Project: #6 (Operations & Maintenance)

Note: Maintenance engineers should be consulted during planning, programming, design and operations.

Work Samples: King County (WA) Road Services Division
<http://www.kingcounty.gov/transportation/kcdot/Roads.aspx>;
CalTrans Structure Maintenance and Investigation
<http://www.dot.ca.gov/hq/structur/strmaint/>

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MARKETING PROFESSIONAL



Professional Training and Certification: Marketing professionals typically have a Bachelors degree in marketing, and/or a Masters of Business Administration.

Contribution to Understanding and Defining the Context of a Transportation Project: Marketing professionals assist with public involvement by designing user-friendly documents and websites to more effectively communicate information about transportation planning and projects with the public. A document or website that has been carefully thought-out and is rich with graphics, photos and examples, is more likely to be read by the general public than one that is text-only. Since the first step in getting the public to be involved in the planning and design of projects is getting them to read the information provided by practitioners, marketing professionals are critical to the process.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: The Maryland State Highway Administration's Intercounty Connector website demonstrates elements of good marketing by having a user-friendly interface, interactive maps, project photos and video updates, document downloads, and frequently asked questions (<http://www.iccproject.com/>).

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PROJECT MANAGER



Professional Training and Certification: Project managers are typically engineers, but can also be planners or landscape architects. Each would have the training and licensure appropriate for his or her particular profession. Depending on the state, project managers may be required to have additional training in effective project management.

Contribution to Understanding and Defining the Context of a Transportation Project: Traditionally, a project progresses through the life stages by being passed from one department at the state DOT to another, with limited connection between staff working in different departments. In response to this, some state DOTs have project managers who, ideally, shepherd each specific project from beginning to end, with the ultimate goal of getting the project delivered on time and within budget. Project managers may specialize in different areas of project delivery, including engineering, planning, environmental specialist, public involvement or landscape architecture. Ideally, they work collaboratively with staff from all departments within the DOT to facilitate progress on their project. Depending on the state, they may be involved in the project for a few phases (scoping through design, for example), or they may be involved in the overseeing projects from planning through to construction, including ensuring that environmental commitments are kept. Their understanding of the context of a project is therefore critical to the ultimate finished product. Operations and maintenance work is generally managed by separate individuals.

Stages of Transportation Project: #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #4 (Final Design & Right-of-Way), #5 (Construction), #6 (Operations & Maintenance)

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PUBLIC HEALTH PROFESSIONAL



Professional Training and Certification: Most public health professionals have a Masters degree in public health, with a Bachelors degree in one of the physical or social sciences. Some public health professionals also have a Masters degree in Urban Planning.

Contribution to Understanding and Defining the Context of a Transportation Project: Where we live impacts our health in many ways; there is particular concern about how a community's transportation facilities and land use decisions contribute to dependence on automobiles, which in turn impacts health by discouraging physical activity, contributing to air pollution, and increasing motor vehicle accidents. Public health professionals can assist in policy and planning by analyzing how specific policies or plans may have positive or negative impacts on public health. They may also assist in the preliminary design for specific projects by analyzing how the design of a project could be improved for public health benefits (such as including safe and attractive bicycle and pedestrian facilities, modifying design to improve connectivity between key origins and destinations to reduce vehicle miles traveled and thus improve air quality).

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: "Urban Sprawl and Public Health" article from the Centers for Disease Control
(<http://www.cdc.gov/healthyplaces/articles/Urban%20Sprawl%20and%20Public%20Health%20-%20PHR.pdf>)

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PUBLIC INVOLVEMENT SPECIALIST



Professional Training and Certification: There is no formal university education degree for public involvement. Specialists typically have a background in urban planning, communications, public relations, or social science. Additional training can be obtained through targeted public involvement courses offered by the National Highway Institute, National Transit Institute, some state DOTs and third-party consultants. Professional training in facilitation is often very important (see the Institute of Cultural Affairs <http://www.ica-usa.org/index.php> and International Association for Public Participation <http://www.iap2.org/>)

Contribution to Understanding and Defining the Context of a Transportation Project: Input from the public is critical to the overall quality of a transportation project because the people who would be affected by the project(s) have the best understanding of what their needs are and how the project(s) can enhance their quality of life. Public involvement specialists are skilled in finding ways to engage the public in the transportation policy, planning, programming, and preliminary design phases. Depending on the phase and the community, the specialist may arrange public meetings to share information, interactive workshops designed to get the public involved in the process, public surveys (online and paper) to get feedback from those unable to attend meetings, websites and discussion forums, and translation services for those with limited English proficiency. In addition, these specialists make themselves available by phone or email to take public comments and to ensure that questions are answered by the appropriate people within the agency. Depending on the requirements of the state, public involvement specialists may be required to prepare a Public Involvement Plan for each proposed transportation project.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: Pelham (NH) Route 111A Intersections Project Public Involvement Plan (<http://www.nh.gov/dot/projects/pelham14491/index.htm>); Brevard County (FL) Public Involvement (<http://www.brevardmpo.com/PIP.htm>)

Practitioner Disciplines Involved in Transportation Decision Making

REAL ESTATE APPRAISER



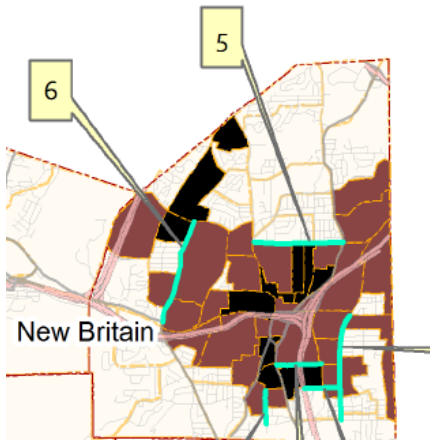
Professional Training and Certification: Federal law mandates that most appraisers hold state certification and licensure, which vary by state, but there are certain minimum standards. Most appraisers of residential real property must have at least an Associate's degree, while appraisers of commercial real property are required to have at least a Bachelor's degree. Most states also have the Licensed Residential Real Property Appraiser classification, which grants holders permission to appraise certain types of real estate. In many states, those working on their appraiser requirements for licensure or certification are classified as a "trainee." Trainee programs vary by state but usually require at least 75 hours of specified appraisal education before one can apply for a trainee position. Across all levels of certification and licensure, trainees must take 15 hours of classroom education devoted to the Uniform Standards of Professional Appraisal Practice and pass an examination. Continuing education is necessary to maintain a license or certification.

Contribution to Understanding and Defining the Context of a Transportation Project: Real estate appraisers estimate the value of real property whenever it is sold, mortgaged, taxed, insured, or developed. They work in localities they are familiar with, so they have knowledge of any environmental or other concerns that may affect the value of a property. DOTs use real estate appraisers to help determine the value of properties and/or easements that must be acquired for transportation projects.

Stages of Transportation Project: #4 (Final Design & Right-of-way)

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SOCIAL SCIENTIST



Professional Training and Certification: Social scientists may have a Bachelors or Masters degree in a variety of fields, including anthropology, sociology, psychology, communication, history, public relations, or political science.

Contribution to Understanding and Defining the Context of a Transportation Project: Social scientists may contribute to transportation projects in a variety of ways, since transportation projects at their core are about people and their quality of life. Social scientists may be involved in the policy and planning stages to estimate the social impacts of specific policies and projects, or the preliminary design phase to assist in understanding how to best fit a project within a specific community.

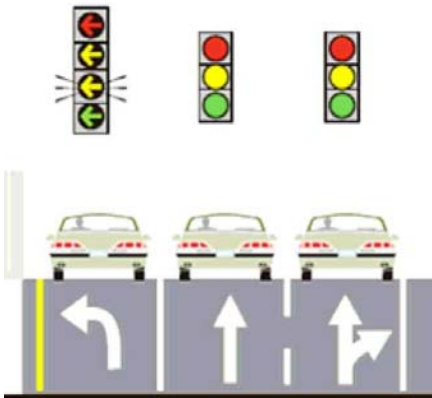
Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #6 (Operations & Maintenance)

Work Samples: Social Impact Report for projects funded in 2009 with the Central Connecticut Region's share of the American Recovery & Reinvestment Act Highway Infrastructure Investment funds

[http://www.ccrpa.org/transportation/Social%20Impact%20Report%20for%20ARRA%20Projects%20\(2009\).pdf](http://www.ccrpa.org/transportation/Social%20Impact%20Report%20for%20ARRA%20Projects%20(2009).pdf)

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TRAFFIC OPERATIONS ENGINEER



Professional Training and Certification: Traffic operations engineers are a specialized type of civil engineer. As such, they must go through the same training and licensure described above for transportation engineers. In addition to being licensed as a Professional Engineer, they may become certified as a Professional Traffic Operations Engineer (PTOE) (<http://www.tpcb.org/ptoe/>).

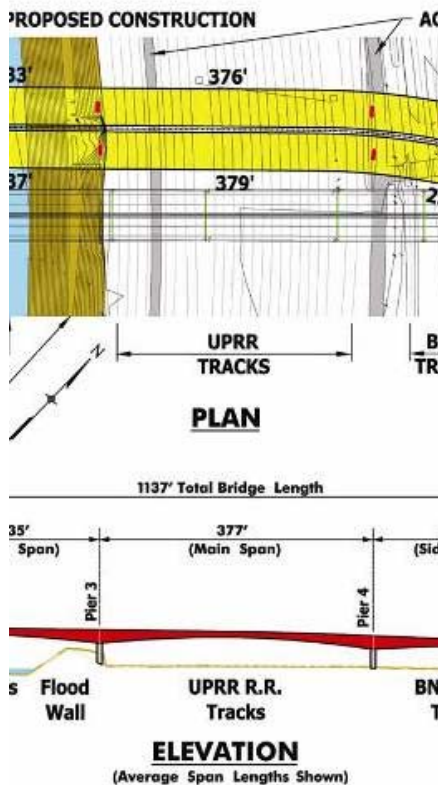
Contribution to Understanding and Defining the Context of a Transportation Project: Traffic operations engineers focus on how existing transportation facilities function, typically on the when, where and how of traffic signals, stop signs, yield, and speed limits. Their understanding of a transportation facility in context can lead directly to improvements that positively affect the quality of life of the transportation users. An example includes traffic congestion at a particular intersection where many cars are making right turns. Examining the context indicates that many pedestrians are walking to and from local businesses impeding the turning movements during vehicle cycles. The traffic engineer decides to solve the problem adding a pedestrian-only cycle in the traffic signal to prevent the conflict between pedestrians and vehicles; thereby, improving traffic flow and safety for pedestrians by reducing potential conflicts with vehicles. Transportation management centers operated by DOTs and other partners (often local governments and state and local police and emergency services) help ensure that the transportation operates optimally under regular demand and emergencies, for large community events, and in inclement weather.

Stages of Transportation Project: #2 (Planning & Programming), #4 (Final Design & Right-of-way), #6 (Operations & Maintenance)

Work Samples: City of Denver (CO) Traffic Engineering (<http://www.denvergov.org/Default.aspx?alias=www.denvergov.org/Transportation>); Broward County (FL) Traffic Operations Division (<http://www.broward.org/Traffic/Pages/Default.aspx>)

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TRANSPORTATION ENGINEER (DESIGN ENGINEER)



Professional Training and Certification: Transportation engineers usually have a Bachelors degree in civil engineering and take an internship during or following undergraduate study with a practicing civil engineer. Sometimes staff from other backgrounds can be trained in the field. Within civil engineering, there are specialties for transportation, structural, construction, geotechnical and water resources. States vary somewhat in licensure requirements, but all require that engineering work be signed prior to construction by a state-authorized engineer with a Professional Engineer (PE) license. Prior to taking the PE exam, engineers spend several years building work experience under licensed engineers. Professional Engineers must adhere to the Code of Ethics for licensed engineers in their state. Not all engineers working in a state DOT or consulting firm are required to have a PE license. All engineers are bound by the Code of Ethics of the National Society of Professional Engineers (<http://www.nspe.org/Ethics/CodeofEthics/index.html>) and the American Society of Civil Engineers (<https://www.asce.org/ProgramProductLine.aspx?id=15294>), as applicable.

Contribution to Understanding and Defining the Context of a Transportation Project: Engineers play an instrumental role throughout the life a transportation project since they have significant input in determining what the project looks like on the ground. Their role is to synthesize information from many other professionals (such as planners, environmental scientists and others) and the community with established engineering principles to design a project that will function to serve the intended purpose in a safe manner. They need to understand where there is flexibility in engineering standards in order to find a solution that best fits the context as well as the transportation need.

Stages of Transportation Project: #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #4 (Final Design & Right-of-way), #5 (Construction), #6 (Operations & Maintenance)

Work Samples: Intercounty Connector (DC Suburbs, Maryland) <http://www.iccproject.com/PDFs/web-plates-contract-a.pdf>; 4th Street Bridge (Pueblo, Colorado) <http://www.dot.state.co.us/4thStreetBridge/design.cfm>

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TRANSPORTATION PLANNER



Professional Training and Certification: Typically, professional planners have a Masters degree in Urban Planning. Certification through the American Institute of Certified Planners (AICP) is not required, but is common, for planning professionals. Planners who are part of AICP are required to adhere to the AICP Code of Ethics and Professional Conduct (<http://www.planning.org/ethics/ethicscode.htm>). Some transportation planners also have a degree in civil engineering and may be certified as a Professional Engineer (PE).

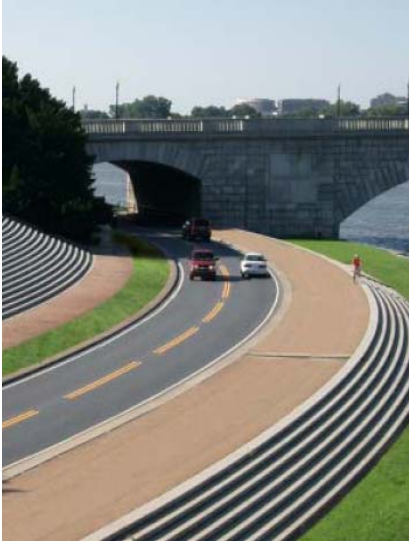
Contribution to Understanding and Defining the Context of a Transportation Project: Transportation planners forecast future transportation needs using current demographic and traffic data, then develop and prioritize a list of transportation improvements to address shortfalls in capacity, safety and mobility improvements. Planning includes all modes of transportation: roadway, transit, and bicycle/pedestrian. This type of work is conducted at many scales: local (town, city, county), regional, and state. Due to the interconnected nature of transportation systems, plans must consider and work with the plans of neighboring jurisdictions as well as overlapping ones (e.g., state-owned roads within city limits). Federal requirements under SAFETEA-LU also require coordination with resource agencies to consider existing resource plans and priorities and anticipate mitigation needs and opportunities.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #6 (Operations & Maintenance)

Work Samples: Washington State Transportation Plan (<http://www.wsdot.wa.gov/planning/wtp/>), City of Ann Arbor Transportation Plan (http://www.a2gov.org/government/publicservices/systems_planning/Transportation/Pages/Transportation%20Planning.aspx)

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URBAN DESIGNER/ARCHITECT



Professional Training and Certification: Architects hold a Bachelors or Masters degree in architecture, depending on the university attended. Each state requires the licensure of professional architects, though the prerequisite experience and requirements may vary by state. Licensed architects are held to the American Institute of Architects' Code of Ethics and Professional Conduct (<http://www.aia.org/about/ethicsandbylaws/index.htm>). Not all urban designers are architects, however; landscape architects and planners can also specialize in urban design.

Contribution to Understanding and Defining the Context of a Transportation Project: Urban designers or architects have a similar background as landscape architects (described above), but focus on specific buildings and spaces rather than the larger landscape. They may be involved in helping provide understanding of the context of a transportation project when it is located in an urban area, to ensure that the design of the project is complementary to nearby buildings and structures.

Stages of Transportation Project: #1 (Policy & Visioning), #2 (Planning & Programming), #3 (Environmental Studies and Preliminary Design), #6 (Operations & Maintenance)

Work Samples: Anacostia Waterfront Initiative (DC) Transportation Architecture Design Guidelines (http://www.contextsensitivesolutions.org/content/reading/AWI_Standards/)

Practitioner Disciplines Involved in Transportation Decision Making

URBAN FORESTER



Professional Training and Certification: Urban foresters may have advanced training in Urban Forestry, Forestry, Horticulture, Arboriculture, Natural Resource Management, Landscape Architecture, Environmental Sciences, Environmental Studies, or Urban Planning. Certification through the International Society of Arboriculture (ISA) is optional and those who are certified must comply with the ISA Certified Arborist Code of Ethics (<http://www.isa-arbor.com/certification%5Cresources%5CISACertifiedArboristCodeofEthics.pdf>). Some states, such as California, have their own certification programs and requirements.

Contribution to Understanding and Defining the Context of a Transportation Project: Urban foresters assist environmental scientists, planners and engineers by preserving existing trees and finding appropriate locations for new ones when designing, constructing and maintaining transportation projects. They may be particularly helpful to involve on a project that will affect particularly large, old, or culturally significant trees to ensure that they are not harmed during construction or maintenance.

Stages of Transportation Project: #3 (Environmental Studies and Preliminary Design), #5 (Construction), #6 (Operations & Maintenance)
